THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by WILLIAM HUNTING, F.R.C.V.S.

No. 944. AUGUST 11, 1906 VOL. XIX

INJURY TO FLEXOR METATARSI.

Two cases reported this week by Messrs. Paton and Williams, with illustrative photos, are extremely interesting. The lesion has long been recognised. Percival in his "Hippopathology," 1852, gives a number of cases, and quotes from Solleysel who wrote in 1698, under the head of "Relaxation and Spraining of the Master Sinew," "this sinew by reason of a strain, a slip or a fall may be relaxed and sometimes disturbed with so much violence that it becomes moveable like an unbent bow-string. When a horse walks the leg seems to hang at the hough because its motion is not regulated by the master sinew; and you would even sometimes imagine that the bone was broken. When a horse stands with his foot fixt on the ground, the hough being extended in its natural posture, there is so little appearance of any grief in the leg that it seems perfectly sound, but if you make the horse move its hinder parts you will immediately perceive the sinew to be as loose and infirm as if it were broken."

This is a sound, graphic description of a case, but the explanation of the relaxed condition of the leg is wrong. It does not "hang" because "its motion is not regulated by the master sinew" but because the muscle in front of the thigh—the flexor metatarsi—has ceased to act.

The two cases we report differ considerably and are thus instructive. Mr. Williams' horse showed sufficient local symptoms to warrant the belief that injury had taken place on the prominent part of the muscle. The cause—a slip—was certain. In Mr. Paton's case no local sign of injury was detected, and the exact cause was not discovered, although the diagnostic symptom—relaxation of tendo-achilles—was most marked.

It has often been discussed whether the muscle or the tendon is the part injured, and which parts. Mr. Paton's case is, we think, the first which shows that injury even of the extreme point of insertion of the tendon into the femur will cause the peculiar movement of limb and the relaxation of tendon. Division of the tendon of the flexor metatarsi in any part will cause definite symptoms, and we incline to believe that paralysis of the muscle will also give rise to the curious folding of the tendo-achilles.

These cases are very rare, but fortunately the symptoms presented are quite diagnostic. There are every-day lamenesses that many of us wish were as easily located.

STIFLE-JOINT LAMENESS
(FLEXOR METATARSI),

By J. PATON, M.R.C.V.S.

My failure to diagnose the above-mentioned lameness accounts for my sending you the following notes and photcs.

Bay draught gelding (one-horse vanner), seven-year-old, naturally straight hocked, was admitted to the hospital on the 1st March, very lame in the near hind leg owing to having slipped up at work a few hours previously.

Symptoms.—Tremor of the quarter muscles and slight relaxation of the tendo-achilles whilst at rest or standing. On walking the leg was carried straight and whilst elevated dangled, conveying the impression that there was a fracture, the heel of the foot always touching the ground first. On manipulating the limb I failed to detect the seat of lameness, but when the leg was flexed and the foot as it were held in position for shoeing, the tendo-achilles fell into a distinct fold as shown by the accompanying photograph, causing me to suspect the flexor metatarsi muscle was partially ruptured, although there was no sign of pain, heat or swelling on the anterior aspect of the thigh. After three weeks' rest it was noticed the muscles of the stifle began to atrophy, which I put down to the inaction of the limb, and as there was no improvement of the lameness an order was given to have the animal destroyed and a post-mortem examination made, which revealed a large deposit of bone on the condyles of the femur completely obliterating the groove from which the tendon of the flexor metatarsi and extensor pedis arises.

INJURY TO THE FLEXOR METATARSI.

The victim of this mishap was a big black gelding, and the cause of his injury was slipping up in Piccadilly. I saw him about an hour after his accident, when he was very lame on the near hind leg. He was in great pain and moved with difficulty. When he attempted to raise the leg it was jerked up, and seemed to hang from the hock without control. The tendo-achilles was flaccid and the leg could be flexed by quite light pressure on the point of the os calcis. The action of the leg resembled the movement of a pump handle.

The muscles in front of the thigh were hard, tense, swollen, and painful to the touch. The horse could stand on the injured limb and rest the other, in which position there was little abnormal to be seen. The peculiar movement of the leg was only

seen when an attempt was made to raise the limb, and for the little time after, whilst the foot remained off the ground. At this time, too, relaxation of the tendon above the point of his hock was very noticeable.

The horse was old, he was put into slings and kept as quiet as possible. In about a month he could walk fairly well and without pain. At this time the two photographs were taken, but they do not show very definitely the condition of the tendo-achilles although they suggest the hanging or swinging position of the leg below the hock.

He slowly and gradually improved and now after three weeks at grass gives every promise of complete recovery.

G. H. Williams, M.R.C.S., M.R.C.V.S.

A MONUMENT TO HORSES IN S. AFRICA.

I am enclosing a photograph I took of a monument to the horse, which I think is the only one that has ever been erected for that noble animal. It stands at Port Elizabeth, Cape Colony. The inscription is not clear in the photograph—it runs as follows:—

"The greatness of a nation consists not so much in the number of its people, or the extent of its territory as in the extent and justice of its compassion."

"Erected by public subscription in recognition of the services of the gallant animals which perished in the Anglo-Boer war 1899-1902."

Percy J. Harris, Capt. A.V.C.

CENTRAL VETERINARY MEDICAL SOCIETY.

(Continued from page 78).

"Some Remarks on Equine Dentistry.—By Mr. R. F. Wall, M.R.C.V.S.

Discussion.

Mr. Livesey expressed his appreciation of the paper and said he had taken the opportunity in the interval of trying Mr. Wall's methods, but he had miserably failed. His partner also had tried and also failed. He had taken the opportunity of looking at six horses varying in age from six to twenty-three. He had tried to move the lips to one side to see the molar teeth and he had found that unaided it was impossible to keep the jaw still. With regard to anæsthetics, he had never known a case where anæsthetics were called for when opening the maxillary sinuses or removing a tooth. He remembered very well seeing Prof. Williams at the New Veterinary College punching out the fourth molar in the upper jaw, and the horse stood without any restraint except one holding a halter shank and another the horse's ear, and no use was made of a twitch. He should never object to punching out the the molar unless the bone was very much diseased and there was a large exostosis around the alveolar cavity. With regard to the use of a trephine, he performed some fifteen or sixteen openings of the maxillary sinus and had never had a horse flinch. In each case he had used a hypodermic injection of cocaine, or adrenalin and cocaine, and so long as the skin was insensitive the animal seemed absolutely insensitive in the bone, standing even without the head being held. With regard to the use of the gag, speculum, or twitch, he never used a twitch as he had never found one necessary, but he was sufficiently a novice to appreciate the use of the speculum or gag. He used the American pattern which opened on the incisor teeth. He had tried very hard to get into sympathy with the patient, as Mr. Wall advised, but had found it practically impossible to carry out Mr. Wall's methods. He had taken the paper into the stables and exactly followed the advice given in regard to examining the molar teeth, and had run the risk of having his fingers bitten off. He thought a man with a hand of average size could not possibly get it in between the cheek and the molar tooth of a pony or horse under 15 hands. Probably the failures were largely due to want of practice. He had also thought there would be difficulty in using Mr. Wall's rasps, which he thought were too smoth and needed guards. He had tried what he could do with one hand, but it seemed to him he should be all night at it. He desired to know how long it took Mr. Wall to rasp a horse's teeth, as he himself found ten to twenty minntes ample time spent for the fee paid. He had always used ordinary rasps or files, and found that by using a speculum he did not hurt the tongue or cheek, and that it was quite easy to take down the sides of the molars and not the tables. He did not think any horse required to have the surface or table rasped down; it was generally the outer or inner edges that had become sharp or possibly chipped.

Mr. Routledge explained how to examine the horse's teeth without a speculum. To examine the near side of mouth stand on the off side of horse, draw out the tongue giving it a half twist to the right with the right hand. Grasp the tongue between the thumb and first finger of the left hand and slide the hand up as far as the commissure of the lips keeping the tongue taut all the while with the right hand. Now raise the left elbow bringing the hand to a right angle with the long axis of the head and press the first and second fingers against the first right lower molar. The horse will, on applying a little pressure upon the tongue against the molar, open his mouth. Of course for the off side the position and hands are reversed. By this means he could examine every tooth in the head. The method required a little practice, but was a very useful one. If the horse tried to shut his mouth on the hand it was simply necessary to press the tongue. With regard to rasps, he thought the average was much too coarse, but agreed that some of Mr. Wall's were too fine. A moderately coarse rasp was the best, and a guard was a very useful addition. Mr. Routledge also exhibited what he considered was an improvement on the Santy forceps; the improvement consisting of a raised acorn-shaped head to the forceps rivet, on to which a forked tapered lever instead of the regulation pattern could easily be passed. He also showed an improved tooth cutter powerful enough to cut any tooth. The forceps and shears can be obtained at Messrs. Stevens and Co. Long Lane, E.C. With regard to shear mouth, a very satisfactory method of dealing with the condition was to put all the teeth on the shear side ont of action, taking a $\frac{1}{2}$in. or $\frac{3}{4}$in. off each tooth. After a while they came back into wear again, and he had a case where he asked a colleague which side he had sheared and the colleague named the near side, whereas he had sheared the off side.

Prof. Macqueen congratulated Mr. Wall on divulging so much expert knowledge. He considered that Mr. Wall possessed a special manipulative skill with regard to teeth, which probably he had inherited from his father, who was the most expert dental surgeon in the profession. He did not agree altogether with Mr. Wall, but he should say that it required a long practice in

order to acquire the necessary dexterity. He had not the slightest doubt that Mr. Wall's method of examining the mouth and of passing the hand in to examine the molars was the proper one, but it required practice. Nowadays, many persons in the profession could not give a ball, and a large percentage could not make one up. In the matter of manipulation of horses' teeth Great Britain was far behind, owing to the dogged conservatism which never seemed to leave the profession, the members sticking to old methods and old instruments, the oldest instruments in the world. They were clumsy in their methods and awkward in their manipulations. Mr. Wall had shown how to put all that right; he had told them how to approach the horse with confidence, but did not say whether the horse was going to exhibit the like confidence, and it was very necessary for confidence to be on both sides Mr. Wall no doubt did not pretend that anyone without practice and without muscle could manipulate the teeth as he had indicated. Mr. Wall had said that in this country the incisor teeth received very little attention and that sometimes the molar teeth could not masticate because of long incisors. He believed in that Mr. Wall had been led away by insufficient acquaintance with the construction of the horse's jaws, or else he had imbibed a good deal of American "bunkum," and he challenged any dental specialist to produce a horse with normal teeth, number and position, in which the molar teeth did not come together in spite of the incisors. The molar arcades of the upper jaw were more widely placed than the lower, and each row of upper molars overlapped the under by at least ½-in. The dental specialist might think there was a space between the upper and lower molars, but he was under a delusion. In America they trimmed the incisor teeth, but in this country they did not. The chief difficulties encountered in practice were certain prominences growing on the molar edges, and sometimes the owner, at the instigation of a stableman, wanted the roughness removed because it interfered with the horse feeding, and Mr. Wall believed that the tongue was frequently lacerated and the cheek wounded. If he himself were put into the witness-box he should have to confess that he had rasped hundreds of teeth for which there was not the slightest justification, and the practice was kept up because it was a good source of income. He did not deny there was such a thing as prominent edges which sometimes interfered with mastication, but in the vast majority of cases the dental difficulty was purely imaginary. The main trouble with cart horses molar teeth was the existence of spaces between them in which food lodged, setting up alveolar periostitis, loosening teeth, and sometimes inducing caries. He admired Mr. Wall's remarks regarding the extraction and cutting of teeth. There was no doubt American instruments were superior to those used in this country. With regard to Mr. Routledge's cutter, Mr. Routledge had evidently experienced a difficulty in fitting the lever underneath the joint-pin. The difficulty with the lever supplied with Santy's forceps was that it only rested on the crown of one tooth. Long ago he had given up the use of the lever and substituted an old tooth rasp, which covered the surface of two o three teeth, and gave a very much better foundation for the force exerted than the lever. He appreciated the improvement shown in the cutters, but thought the American cutters were better. He believed Mr. Wall deserved to be congratulated for giving so much valuable information.

The PRESIDENT recommended the members to read a chapter in a book published by the late Sir John Astley 50 years ago, called the "World of Sport," where he described some of the teething troubles of young thoroughbreds, and explained some of Mr. Lœffler's methods of operating on teeth, methods very similar to those Mr. Wall had described. He also drew a picture of veterinary rasping which was by no means flattering to the veterinary surgeon. In the old-fashioned methods of rasping the teeth very much depended upon the skill of the operator and there was very much room for improvement, an improvement which he thought had taken place. He agreed with Mr. Wall that many of the troubles would have been avoided had the teeth been seen to when the horse was young.

Mr. ROUTLEDGE showed a specimen of persistent infundibulum, which he observed was a difficult matter to diagnose.

Mr. FORMAN asked how Mr. Wall managed without a lever.

Mr. DAVIS agreed with Professor Macqueen that the rasping off of asperities was very often done with very little benefit to the horse, but if it was not done by the veterinary surgeon it was done by the blacksmith. He mentioned a case where he was asked to rasp the teeth, but told the owner he would have nothing whatever to do with it. He thought the statement made by Mr. Wall that all young horses required their teeth attended to was not correct, because unless a horse was slobbering and messing his food no operation was required on the teeth. He mentioned two cases where a horse had a swelling about the second upper molar, cases of alveolar periostitis, and the teeth would have to come out. He had been assured by the owners that nothing had been observed on the day previous, and he wished to know whether Mr. Wall had known of cases developing so suddenly and what treatment he would adopt.

Captain MARTIN thought horses often required their teeth rasping. He had seen many cases of laceration and cuts on the cheek, and had frequently found horses dribbling from the mouth from roughness of the teeth. In all cases where a horse was falling off in condition the teeth should be examined and if necessary rasped. It never did any harm and very likely would do good. He agreed with Professor Macqueen that molar teeth could not be kept apart by over-growth of the incisors.

Mr. WALL, in reply, was sorry to hear Mr. Livesey had been unfortunate in not being able to handle a horse's mouth. There was no difficulty, but he could not very well explain how it was done, except by saying that it was an insinuation of the hand between the teeth and cheek and must be acquired by experience. The reason why he adopted the new method was an experience he had on being called in by an American to do some horses' teeth. He took the ordinary rasp and gag, but the owner refused to allow him to use them, and that led him to go into the matter. Later on in America he saw the methods they adopted, but was not able to practice them straight off. According to Mr. Livesey the instruments were unguarded, whereas every one of them had guards at the sides and front and some of them at the back. With regard to rasping the table of the teeth, he had said that the more that was taken off the teeth the less grinding surface was left; the thing was to keep it in its natural condition if possible. He thought Mr. Routledge's lever was a great improvement but with regard to the cutters it would be an advantage to have a little more length from the jaws to the hinge. He had met with one or two cases of persistent infundibulum, but thought it was rather a rare thing and required considerable diagnosing. He thought Professor Macqueen on the whole had agreed with the paper. He himself had thought for a long time that there was a lot of "bunkum" about the space between the molars, but he had examined some thousands of horses and believed he was quite right in what he had said. As Professor Macqueen had said there was a great deal of space. It was possible to take a piece of stick and pass it right between the upper and lower molars.

Professor MACQUEEN asked whether the mouth was closed when the stick was put in.

Mr. WALL said it was closed and the lips held down so that the incisor teeth could be seen meeting.

Prof. MACQUEEN said the stick went underneath the overhanging portion of the upper molars.

Mr. WALL, continuing, said that when the teeth were cut down the horse began to mend and mend rapidly, and that was his greatest argument. With regard to the enlargement in the region of a molar, he had had many cases where it came on very suddenly. Very often it would be found to be simply an alveolar periostitis caused by a piece of chaff or other foreign body penetrating the alveolus, and the only thing was to extract the tooth.

Mr. ROUTLEDGE said persistent infundibulum was very often at the bottom of the trouble.

Mr. WALL said it might be, but he doubted it. With regard to the attention to the teeth, he did not think very young horses required anything doing, but they should be frequently examined and any irregularity remedied at once. Horses did better when all the sharp edges were taken from the teeth and the teeth were kept in a more or less level condition. In conclusion he thanked the members for the kind manner in which his paper had been received.

Prof. DEWAR said he had a case of persistent infundibulum in an incisor tooth in a young animal and suppuration was going on and discharging from the gum under the upper lip. Perhaps Mr. Wall could say if it was possible to stop the tooth and preserve its usefulness and so avoid the necessity for extracting it. As a general rule he did not like to interfere with horses' teeth if there was nothing the matter with them, because he was perfectly certain that since dental surgery in the human subject had reached such a high pitch more teeth required attention than when there was no dental surgeon and no care taken of them.

Mr. WALL agreed that the teeth should not be touched except where there was evidence of pathological change, irregularity or anything to interfere with comfortable and perfect mastication. In regard to the case of persistent infundibulum, if extraction was not desired, the tooth should be drilled and asepticised and stopped with a cement or amalgam. If there was an enlargement of the bone the best thing was to take the tooth out. With regard to persistent infundibulum, he had found it necessary time and again to drill straight through the tooth—if it was a lower tooth driving it straight through the jaw, thoroughly asepticising the tooth and the hole, and letting it heal from the bottom.

Prof. MACQUEEN did not understand how Mr. Routledge justified the description of persistent infundibulum in a molar tooth. Infundibulum extended from the crown downwards, but in Mr. Routledge's case it was from the fang upwards. It was not infundibulum at all in the sense of being a pulp cavity.

Mr. ROUTLEDGE said it would be if the tooth wore away.

On the motion of Mr. Perryman, seconded by Mr. Savournin, a vote of thanks was accorded to Mr. Wall, and votes of thanks having been accorded to the exhibitors of morbid specimens and those taking part in the discussions the session terminated.

A vote of thanks to the President concluded the meeting.

HUGH A. MACCORMACK, *Hon. Sec.*

WESTERN COUNTIES' VETERINARY MEDICAL ASSOCIATION.

The 53rd general meeting was held at the Great Western Hotel, Taunton, on Wednesday, July 25th. The President (Mr. E. J. Thorburn, of Okehampton), occupied the chair, other members present included Messrs. Wm. Ascott, Bideford; P. G. Bond, Plymouth; E. W. Bovett, Bridgwater; H. W. Davie, Crediton; E. Dunstan, St. Mellion; J. Dunstan Liskeard, W. Graham Gillam, Minehead; G. H. Gibbings, Tavistock; R. E. L. Penhale, Torrington; C. E. Perry, Bristol; A. G. Saunders, W. E. Taylor, Taunton; and H. E. Whitemore, Langport.

The minutes of the last meeting were read and confirmed.

CORRESPONDENCE.

Apologies for non-attendance were received from Profs. Sir John M'Fadyean, Hobday, Penberthy, and Pritchard, and from Messrs. Baker, Bloye, J. C. Collings, Crowhurst, Elder, Harvey, Olver, Parsons (2), Penhale (2), Roach and Turvill.

A circular letter from the Central Veterinary Medical Society enclosing copy of resolution *re* an annual registration fee, with synopsis of same by Major Butler, A.V.D., having been read, it was resolved to defer the further discussion of same to the next meeting.

Expert Evidence by Inspectors of the R.S.P.C.A.—A letter hereon from the Royal College of Veterinary Surgeons was read, and the members were asked to communicate any such cases which had come under their notice, to the Hon. Sec. at an early date.

CONTAGIOUS DISEASES (ANIMALS) ACT.

After a lengthy discussion on this subject, the Hon. Sec. was requested to forward a copy of the following resolution to each member of the Association, and to the members of the Contagious Diseases Committee of the Devon County Council. "That the members of the Western Counties Veterinary Medical Association consider the present scale of fees allowed to veterinary surgeons by the Devon County Council altogether inadequate. They suggest that the scale should be revised and similar fees to those paid by the Cornwall County Council be granted, viz., one guinea for each investigation and 1s. per mile one way as travelling expenses."

Donations.—The sums of two guineas and three guineas were voted respectively to the National Veterinary Benevolent Society and the Victoria Veterinary Benevolent Fund.

Congress of the Royal Sanitary Institute.—Mr. Perry (one of the delegates of this Association) gave an interesting *resumé* of the proceedings at Bristol, for which he was accorded a hearty vote of thanks.

New Instruments.—The Hon. Sec. reported that in accordance with the instructions of the last meeting he had purchased a new pair of Universal tooth forceps; these had been tried by some of the members with very satisfactory results. He had also given instructions for the old pair to be repaired, for use in case of emergency.

New Member.—Mr. Percy Penhale, of Barnstaple, was unanimously elected a member of the Association.

SPECIMENS.

Messrs. ELDER and Saunders submitted a hunter which was lame in the near hind leg, for the opinion of the members as to the seat of lameness; after a careful examination no one cared to venture a definite opinion on the subject, but there was a concensus of opinion that the lameness was due to some affection of the nerves.

Mr. R. E. L. PENHALE exhibited a large growth which he had removed with an ecraseur the previous day from behind the dorsum surface of the tongue of a three-year-old cow. He did not consider it was an actinomycotic growth, but had not found time to examine it under the microscope.

Mr. ASCOTT submitted a pair of spoon forceps which Messrs. Arnold and Sons had made for him from an old pattern he had used for many years and which he had found of great assistance in removing nearly every kind of warty exerescence, including the large bunches common on young cattle (known in the West Country as "weybreds." The action of the forceps is such that there is little or no hæmorrhage, and the growths being cleanly removed, seldom recur.

PRESIDENTIAL ADDRESS.

By E. J. THORBURN, M.R.C.V.S.

Gentlemen,—It is impossible for me to find words with which to express my thanks to you for so unanimously electing me President of this Association for the ensuing year. It is an honour which I had not the remotest idea would be offered me, at any rate, for some years to come. I have grave doubts as to my qualifications for such a position, and shall crave your kind indulgence to forgive me for my shortcomings. One thing which I am delighted about is that our old and tried friend Mr. Ascott has again accepted the secretaryship. I feel sure from his natural kindness of heart he will do all he can to put me right when I get adrift; then again I feel I am amongst so many old friends who will be willing to condone my faults.

Although only a comparatively young member I have had the welfare of this Association very much at heart, during the past six or seven years I have always looked forward with pleasure to the meetings, and have attended as many as possible always coming away from them with profit.

Associations of this kind are grand institutions, I should like to see them more appreciated and better attended. Were it not for some of our old members who stick to the Association through thick and thin, and who don't mind a little sacrifice of time and trouble, the attendance of our meetings sometimes would be small indeed. Such Associations are a great help to us both intellectually and socially, such diseases as redwater, acorn poisoning, and the like are more common in one locality than another and in no better way can the symptoms, treatment, etc. of such diseases be discussed than by bringing them up at these meetings; many of us have not the time or perhaps the gift for writing to our journals, and thus if V.S. are neither members of an association nor write to our journals much valuable information is lost to the profession. Much can be learnt through an interchange of ideas at such meetings, benefitting one and all and helping us to lift ourselves out of that groove we must inevitably get into plodding away in a country practice.

In such an address as this it is usual I think to touch on subjects which are of interest for the moment to the profession generally, and the Association in particular. Turning for a moment to the prospects of our profession as affected by motor and other mechanical traction, now and again I have read letters written by veterinary surgeons to the journals, and from them one would imagine it would be only a few years before we, as a profession, would become almost extinct. This is, of course, a ridiculous and very pessimistic way of looking at things, though undoubtedly the various forms of locomotion other than the horse must affect us to a certain extent, yet other branches which are and which will be open to the profession will go a long way to compensate losses incurred in that direction.

Let us take horse-breeding. A few days ago I was reading statistics of the number of horses in the United Kingdom, and I saw that in 1875 horses used for agricultural purposes including brood mares and unbroken colts amounted to 1,800,000, in 1891 the figures showed just over two millions, but in 1905 the return showed over 2,100,000, this increased return is shown only a few years after the conclusion of the Boer War, during which war thousands of horses were shipped from our shores.

What do we glean from these figures? 1. That horse-breeding is greatly on the increase; 2, that districts which were depleted of horses during the war are being rapidly restocked. To us as veterinary surgeons this information is very gratifying. What is more—and those who know will endorse what I say, horses to-day are fetching as good, and in some cases better prices than they have for some time; and moreover, I think the prices of horses will be maintained *if*—and there comes the rub—if farmers and breeders will pay greater attention to the breeding of sound and *suitable* animals.

In the Army horses are always in demand, and as I have a great deal to do with Army horses I may tell you that the English and Irish bred ones are found to be by far the most suitable.

What I think will be a source of grave anxiety is the fact that a large number of our good brood mares are being sold, and at good prices too, and shipped to foreign countries. This is a national matter, and should receive very serious consideration on the part of the Government.

The Duke of Portland suggests that the Government should buy horses at two years old instead of at four and have them trained. This I think would be a capital scheme, and would give the stimulus to horse-breeding so greatly needed. We as veterinary surgeons should do all in our power to advise the farmer to breed from good, sound, and *suitable* mares, and from sound and suitable stallions; and to discourage to our very utmost the strong tendency there is amongst farmers and others to breed from mares which are unsound and worn out, and which they often put to a neighbour's colt for the sake of cheapness, which colt may also be the subject of hereditary disease. The registration schemes which are now afoot are, I think, a great stride in the right direction.

With regard to our employment as meat and dairy inspectors, all will agree with me that such positions should be filled by qualified veterinary surgeons, and I am sure we are glad to see that in some places veterinary surgeons have been appointed to inspect the meat supply, but we must not hold such posts *under* the medical officer, but in conjunction with him; this is absolutely imperative.

It is very discouraging when we think of the ignorance of many of the laity as to our qualifications for such posts. Few of them have the remotest idea of what our education really consists, or of the wide range of subjects embraced in our College curriculum. Only the other day I was reading of an instance where our worthy friend Mr. Penhale, of Torrington, had examined a carcase of an animal and had given a certificate of its fitness for human consumption. The Mayor poohpoohed the idea of a veterinary surgeon examining the carcase saying that the medical officer's and sanitary inspector's certificates were quite sufficient. It is such occurrences as this which dishearten one, and it is only by our individual efforts we shall make headway against such prejudice and ignorance. We must do all we can to educate the public to appreciate our worth in such matters.

Another subject of interest I would like to lightly touch upon is the R.S.P.C.A. Against the Society

itself I have not one word to say, but am only too glad such an institution exists; what we do object to, and that very strongly, is the way appointed inspectors go into court and give evidence of an expert nature—giving their opinion on causes of disease and lameness of which they are totally ignorant Unfortunately now and again an instance happens where the evidence of such men has been accepted, in the face of that given by the veterinary surgeon. What is our remedy? I must confess it is a very difficult question. Some good might be done by associations such as our writing to the Secretary of the Society pointing out the absurdity of these men giving such evidence and being allowed to plead their case in court, and cross-examine a veterinary surgeon. Another thing we might do is to follow the example of a gentleman whose name I unfortunately forget, but who, I believe, practises in the Midlands, in protesting before the magisterial bench against expert evidence being given by these men, pointing out that such evidence should only be given by duly qualified veterinary surgeons.

I would like to say one word (and this will interest more especially the veterinary surgeons practising in Devonshire) about the fees paid by the County Councils. Twelve months ago our good friend my worthy predecessor brought up this subject, I believe, in his presidential address, and the Clerk of the County Council was written to concerning it. To the best of my recollection no answer was sent to our Secretary's letter. I think the time has now come when a little coercion is necessary. We are all agreed that the fees paid are entirely inadequate to the work done, and I would suggest that we combine not to accept anything less than one guinea for each inspection, and a shilling a mile one way for travelling expenses, this I think would be only a fair fee and on a par with that paid by adjoining county councils.

Whilst on the subject of fees I should like to refer to a suggestion which has lately been made, that an annual fee be paid by each member of the profession to the R.C.V.S.; this is a matter which requires our serious consideration. Personally I should be only too pleased to pay a fee, provided our interests were looked after a good deal better than they are at present. I think something should be done to stop the free advice and giving of prescriptions in the veterinary columns of the various agricultural papers. Men who write for such papers must have lost all sense of honour and fair dealing towards their fellow members. I don't think any measure the Registration Committee could enforce in such cases would be too drastic. Every fresh treatment of disease is published broadcast: take actinomycosis and milk fever for instance.

Then, again, there is the veterinary chemist, and as I know in one case a man advertising himself as a "Veterinary and dispensing chemist by examination" the words veterinary and chemist being in huge letters and the dispensing in very small letters indeed. The Registration Committee will not proceed against such men, or would not in this particular case; but where a veterinary surgeon has gained distinction at College and puts on his note paper "Coleman medalist," for instance, this man gets a letter from the Secretary of the College telling him unless he gives an undertaking to refrain from so doing he will be called before the Registration Committee. When we see the College willing to protect our rights, then I think few indeed would object to pay an annual fee.

A good deal has lately been said about parliamentary representation. Well, I am one of those who cannot see any real benefit to be derived from such representation. Supposing we were represented. Say all preliminary difficulties had been overcome, and one of our members was in "the House." Well, first and foremost he is a party man, bound to support that party whether it should happen to be for the good of, or against the veterinary profession. If he did not vote with his party a day of reckoning would come with his constituents: after all he would only be a unit in the House, having one vote. If we could get him made Minister of Agriculture right away, then the benefits we should derive would be manifold; but such an occurrence is beyond the hope of possibility. No; I think we can, for the present at any rate, do more good by interesting in our cause the members who represent our various divisions, putting before them our views when any question is before the House likely to benefit us.

Before closing my address I should like to express my delight that our profession has been so recently honoured by the King conferring a Knighthood on our highly esteemed Principal of the R.V.C. We all know how richly Sir John M'Fadyean deserves the honour. I am sure those of us who had the privilege of studying under him felt a very keen sense of pleasure when we read of the event. Speaking personally, Sir John has been kindness itself to me since I have been in practice. Whenever I have sent specimens up to him asking advice he has always given it willingly and courteously, nothing seems ever too much trouble to him, and I hope that many, many years of usefulness are in store for such a splendid man.

In conclusion, gentlemen, let me again thank you for the honour you have conferred upon me, I feel sure you will support me most loyally, and I sincerely hope that during my year of office the reputation and integrity of the Association will remain unimpaired.

CLINICAL NOTES ON SOME OF OUR POISONOUS PLANTS.

By W. Graham Gillam, M.R.C.V.S., Minehead.

Mr. President and Gentlemen,—When our Secretary asked me to furnish matter for discussion at our meeting to-day, I consented chiefly because the meeting was at Taunton, which is practically the only meeting I can get to, owing to my residing in such an inaccessible quarter.

In introducing these observations on poisonous plants I cannot claim to be bringing forward anything new, but the subject is a familiar one to most of us who call ourselves country practitioners, and should therefore elicit the experience of individual members and promote discussion.

It is a well-known fact that every year a large number of farm animals die and no trouble is taken by the owners to ascertain the cause. Were the veterinarian more often called in to conduct a post-mortem examination and to enquire into the history and circumstances connected with the death it would be occasionally found that the animal in question had been killed by eating some poisonous plant or shrub.

In my short experience as a coontry practitioner, the plants I find from time to time responsible for the death of horses, sheep, or cattle, are: Yew, Hemlock, Water Dropwort, Aconite, Foxglove, some members of the Nightshade family.

In regard to Yew, Taxus baccatus or yew is a tree or shrub familiar to most people. It is found in the shape of trees of varying size, as ornamental shrubs (particularly in ancient gardens) or in the shape of compact hedges.

Its poisonous properties are well known. The leaves appear to be the most poisonous part of the tree, and apparently more so when they are in a half dried condition. The berries which are bright red in colour do not appear to possess the poisonous properties of the leaves, as children and birds appear to eat them with impunity.

Cases of poisoning occur in horses, cattle, sheep, and pigs. though in my experience the animal generally poisoned had been a horse. The following is a typical case :

I received a message to proceed a distance of nine miles to see a timber-hauling horse that had been suddenly taken ill. On my arrival about an hour later I found the horse dead. The symptoms as detailed to me were very much like those of anthrax. The carter said the horse suddenly while working stopped, started blowing and trembling, finally staggering and dropping dead. Knowing the plantation so well, where the horses had been dragging the timber, yew at once suggested itself to me, and the carter admitted that the horses were in the habit of nibbling at the trees as they passed.

The post-mortem examination confirmed my suspicions. There was a good deal of trypany and when the abdomen was opened there was a lot of evil smelling gas. I found well marked congestive patches throughout the stomach and bowels. The stomach contents were of a very brilliant green colour, and on washing some of the ingesta the hard leaves of the yew could readily be seen.

Within a few weeks the same firm had another horse drop dead on the road and I was asked to go and make a post-mortem examination. In this case the history and the post-mortem lesions were identical, and the leaves were very easily found in stomach. I suggested that in future when the horses were at work in this particular plantation, they should wear muzzles. This plan was adopted with the result that the firm have had no further losses from this course.

I have had no cases of yew poisoning in cattle, but the symptoms are seen to be loss of appetite, increased respirations, a weak pulse and constipation, succeeded by a deep green fœtid diarrhœa.

The treatment suggested consists of oleaginous purgatives, followed by stimulants and antispasmodics in gruel, and as there is frequently tympanitis it may be necessary to use the trocar.

Not long after these cases I was asked to make a post-mortem examination of a pig and a peacock. The peacock was found dead in the morning and no symptoms were noted by the owner. The pig appeared all right in the morning, but during the day it got out of the field and was seen grubbing about in the lanes and hedges. Later in the afternoon it was noticed to be staggering about and frothing at the mouth. It suddenly fell, made a few struggles, and died.

Post-mortem : Peacock. A quantity of bright green material in the crop and gizzard. Mucous membrane of pharynx blackened ; ecchymosis on the heart walls and on the mucous membranes of the bowels.

Pig. The stomach contained the usual odds and ends, with a lot of deep green ingesta, with partly masticated leaves and berries of yew ; the heart was filled with tarry looking blood, and apart from a patch of congestion on the stomach mucous membrane there appeared to be nothing much abnormal. A search over the premises revealed a heap of hedge clipping chiefly of yew, and on this heap I noticed the pig's dropping's. The gardener said he had seen both the pig and the peacock poking about in it the day before.

I may say that I have seldom found any other lesions than those I have mentioned, and it is very rare indeed not to be able to find the leaves either in the stomach or bowels.

Conium Maculatum. Hemlock

This poisonous umbelliferous plant is extremely common in my neighbourhood, but some of our farmers are now trying to extirpate it. It bears a close resemblance to most of the umbelliferæ, but its chief characteristic is its smooth purple spotted stem, and the leaves when crushed have a somewhat mousey smell. It is found as a rule growing in hedges, in thinly planted covers, and sometimes amongst pasture grass. My experience leads me to conclude that that the plant is more poisonous in the spring before it has flowered. Sheep appear to be the animals most commonly poisoned by hemlock.

An example. Some Devon long-wool sheep were taken ill in what the owner thought a strange manner. He asked me to see them and make a post-mortem examination of one that had died. On my arrival I found four ill, showing the following symptoms. Abdomen tucked up, the animals had a dazed appearance, and appeared to be deaf ; pupils widely dilated. Soon after this they began to walk unsteadily, and the hind legs were dragged and were very cold to the touch. While there three out of the four died, apparently quite painlessly, making only a few feeble struggles.

I made a post-mortem examination of the one that died last. A slight amount of frothy mucus was coming from the nostrils and mouth ; pupils widely dilated ; little or no tympany ; blood dark and fluid ; the stomach and bowels showed congestive patches in the mucous surface. From previous experience I attributed death to hemlock poisoning, this being confirmed by finding plenty of the plants in the hedges and a large quantity of small seedlings amongst the grass, which bore signs of having been recently nibbled. The only reason I could give for the sheep eating them, was the excessive dryness of the season and the scanty pasturage ; whereas the grass was yellow and parched, the hemlock was succulent and green, and this may have attracted the sheep. It has generally been my experience that the greater number of poisoning cases occur in dry springs and summers.

The one that was ill I gave infusion of coffee and diffusible stimulants ; the owner had previously given it a large dose of linseed and castor oil, by the next day it appeared to be all right.

Not long after a donkey placed in the field died from eating hemlock, and the symptoms he showed were well marked tremors, inability to move, dilated pupils, and diarrhœa. He died before treatment could be adopted.

I find in treating these cases that it is a good plan to keep the patients moving about.

The symptoms of poisoning from the other poisonous umbelliferous plants are very much like those I have enumerated, in fact can hardly be differentiated, and one can only arrive at a satisfactory conclusion as to cause of illness or death by noting the symptoms, enquiring into the history with regard to feeding, and a careful examination of the feeding ground with a view to discovering the offending plant, and I think I may here say that the number of these cases that occur from year to year quite warrants the inclusions of botany in the student's curriculum. There are some who say that the subject is unnecessary.

Œnanthe Crocata.

Next to Hemlock I think Œnanthe Crocata, known as Hemlock Water Dropwort, is the most common plant of this family to cause death. In its appearance it differs from Conium Maculatum by its stem not being spotted, the leaf segments are larger, and its root has a nodular or tuberous appearance, not unlike a dahlia root. It is usually found in moist places.

In a case where some foreign sheep were poisoned by eating this plant, the symptoms were very much like those of hemlock poisoning, but in addition there was a great deal of straining and green fœtid diarrhœa.

The post-mortem appearances were almost identical with those mentioned when referring to Hemlock. Of two that were ill one died next day, and the other recovered under the before mentioned treatment. These sheep were in an orchard, and the only poisonous plant there was the Water Dropwort, a rather unusual situa-

tion for it, considering the orchard was well drained. The presence of these plants was however easily accounted for. The orchard was bounded on one side by the road, and when in the early spring the roadside ditches were cleaned out the scrapings had been thrown over the hedge, and a lot of young plants had taken root.

With regard to some of the other umbelliferous plants such as Œnanthe Fistulosa, Œnanthe Phellandrium, Cicuta Virosa etc. I have had no experience of their well known poisonous properties and look to some members to enlighten me.

Aconitum.

In the Ranunculacea we have a very poisonous plant in the shape of Aconitum Napellus. Aconite or Monkshood is well known as a poisonous plant, but as it is so rarely found wild it is not often that one hears of animals being poisoned from this source, and my experience limits me to one case only. It is usually found in old gardens, and its tall spike of hooded blue flowers is very familiar. Occasionally it is found wild as an escape from some garden. I have found it once in North Devon and twice in Sussex wild, that is to say right away from any garden.

In the case in question the owner had cut a lot of orchard grass which contained a lot of weed, and amongst it some aconite plants. This was thrown in the hayrack as a feed for the horse at night. The next morning I was sent for, the message being that the horse was choked. Those of you who have had the misfortune to give an overdose, or a dose not sufficiently diluted of Tr. Aconite are quite familiar with the symptoms. The neck was arched, eyes protruding, great salivation with convulsive spasms of jaw and neck muscles. There was a good deal of colic, the abdomen was tympanitic and the perspiration pouring off the animal.

I have on two occasions had the misfortune to give an overdose of aconite, so was familiar with the symptoms. I asked the owner if he had given any tr. aconite or anyone's patent fever or cough powders. He said the horse had nothing whatever in that way. I overhauled the contents of the hayrack and found quite a number of large aconite plants in bud, together with parts of the roots; how much the horse had eaten it would be impossible to say, but judging from its half-starved condition I should say it would eat anything that was green.

Treatment.—I ordered hot fomentations. Gave an oil purgative, and to ease the pain gave an anodyne in the shape of ext. belladonna with a diffusible stimulant. The animal recovered.

The owner, a poor man, was a notoriously bad feeder, and not long after the horse died from eating hemlock, a happy release from a miserable existence.

Digitalis Purpurea—Foxglove or Cowflop.

This plant which belongs to the Nat. Order Scrophulariaceæ is familiar to all. It is one of the most graceful of our wild plants with its tall spike of drooping, bell-shaped purple flowers. It is common in hilly districts, but somewhat rare in flat parts of the country. Poisoning by this plant does not appear to be frequent, and in the case I shall now refer to it was a long time before I could trace the source of the poison.

During the winter months I was asked to see a horse and two cows that the owner said were very bad. Previous to my visit they had been feeding very erratically, sometimes eating a hearty meal and at other times refusing it. Soon after feeding he said they would start breathing hard, and then lie down as if fagged out.

The chief symptoms I noticed were an almost imperceptible pulse, a contracted pupil, and very peculiar breathing. The owner said they were continually staling. I did not notice the cows stale, but the horse did, and it was something like the urine one gets in a case of azoturia. I was considerably at a loss in discovering the cause and in knowing what to call the complaint.

The first thing I did was to examine the food. The horse was having hay, hay chaff and pollard, and the cows hay, meal, and roots. A rougher lot of hay I have never seen. The man said it was from the bottom of the rick. It consisted of a very small percentage of hay and the rest was made up of dry twigs, thistles, nettles, and a large quantity of dried foxglove plants. The symptoms, together with the presence of these plants, led me at once to conclude that the animals had been poisoned. Asking the owner how he accounted for these plants at the bottom of the rick he explained it by saying that they usually made the bottom of the rick with these hedge trimmings, or "outside parings" as he called them. I told him what I thought, and he said I was probably right. He hadn't the remotest idea how much of this they had had.

I at once ordered purgatives, followed by stimulants, with fair doses of Tr. Aconite. The cows made a good recovery, but the horse died same night.

I made a post-mortem next morning, and the only noticeable lesions were slight congestive patches in the stomach, the heart enlarged and very flabby with dark discolorations on the endocardium; the kidneys were softened and dark purple in colour.

I may say that the foxglove is said to contain the greatest percentage of digitalin when two-thirds of its flowers are expanded.

Belladonna.

We have three plants of this family growing in this country, all of which are poisonous, namely Atropa belladonna, Solanum dulcamara, and Hyoscyamus niger.

I have had no experience with cases of poisoning from either the first or last named plants. I have never seen the deadly nightshade wild, except in Sussex, and it is fortunately becoming very rare, and the henbane does not seem so plentiful as it used to be. I think the rarity of these plants is accounted for from the fact that when enterprising people come across these plants in any quantity the whole lot are rooted up, and packed off to some drug firm; at any rate this used to be the case.

Solanum Dulcamara, woody nightshade or bittersweet, is much more common. It is a shrubby climbing plant with heart shaped leaves and small clusters of drooping purple flowers with bright yellow anthers, not at all unlike a potato blossom on a smaller scale. It grows in damp hedges and covers. It is not often that one hears of our patients being poisoned from eating this plant, or others of the same natural order; on the other hand it is by no means rare to hear of children being poisoned with the berries which in the deadly nightshade are black, and in the woody nightshade are red.

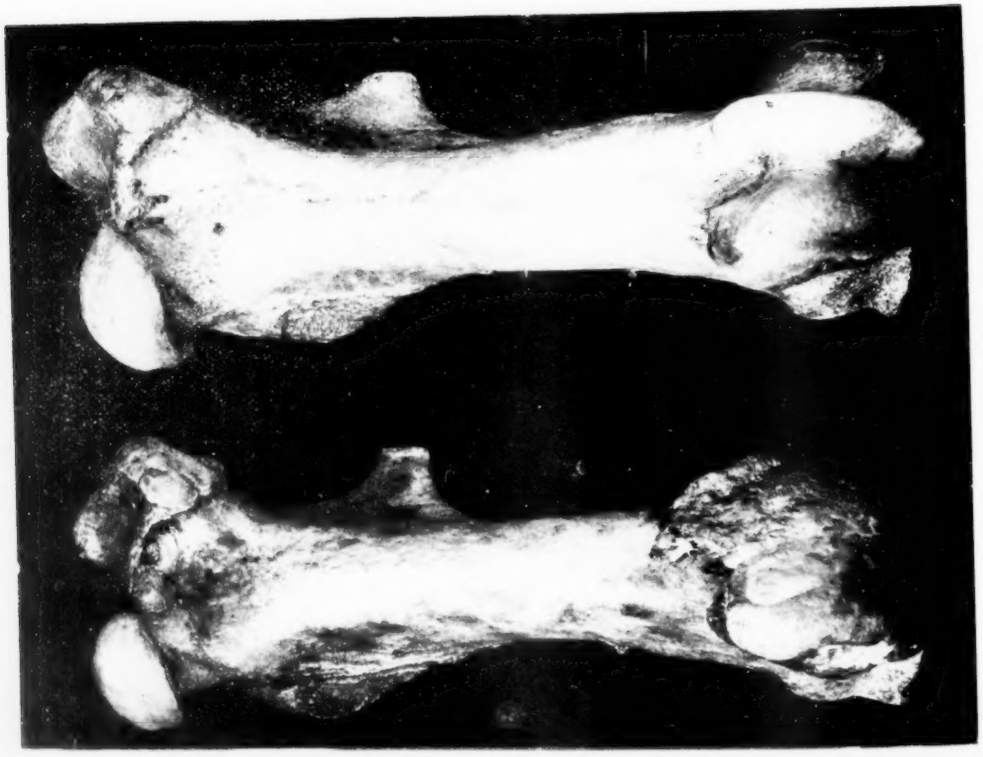
Two years ago I was asked to visit some sheep that the owner suspected had been poisoned, as they had broken away from the flock and had got into a cover where one was found dead and others ill.

Symptoms.—Small intermittent pulse, temp. 104°, respirations hurried, pulse dilated, staggering walk and green diarrhœa.

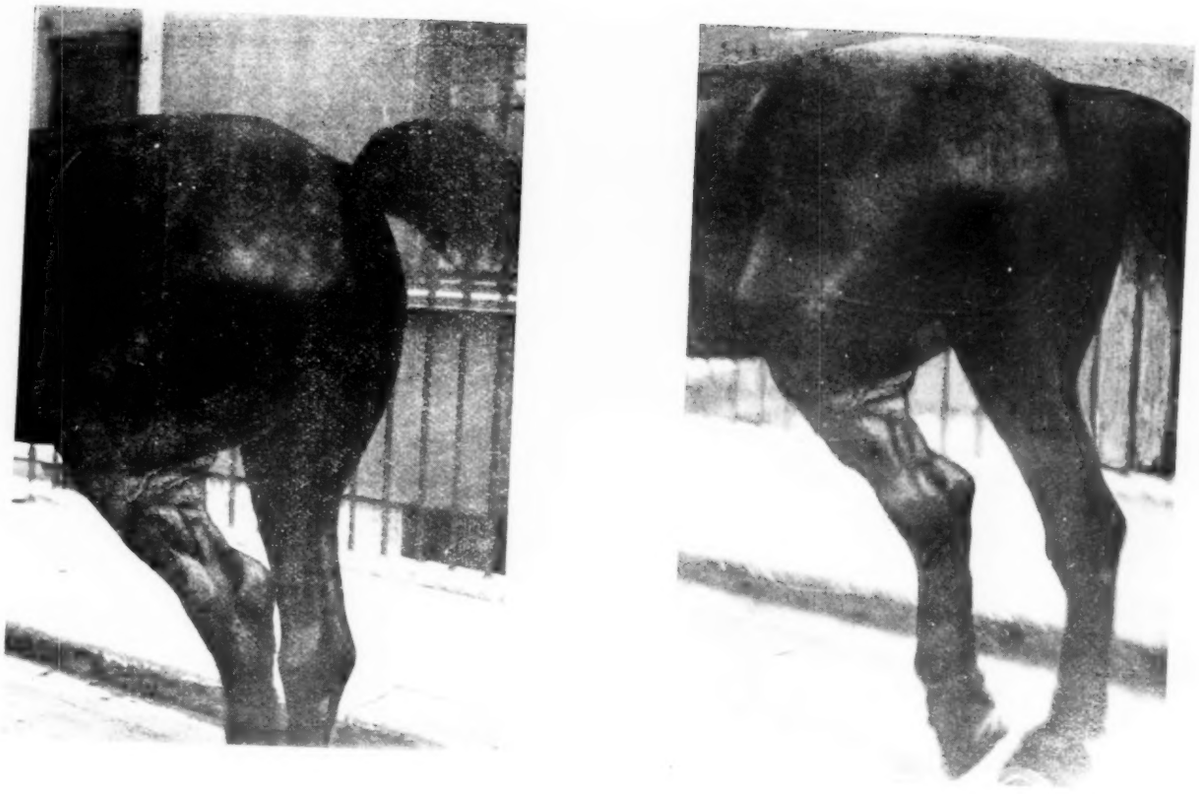
I immediately made a post-mortem examination of the dead one. Result: Blood dark and tarry looking. Heart ventricles firmly contracted. The rumen contained a lot of deep green coloured ingesta, and on washing some of the latter I found some short pieces of the stem of Solanum Dulcamara, together with the skins and seeds of the berries. On searching the cover plenty of the plant in question was found, and there were signs that the sheep had been eating them.

The three sick ones were treated. Physostigmatine is said to be the antidote, but having none with me I merely gave diffusible stimulants. There was a certain amount of excitement later in the day, when I gave

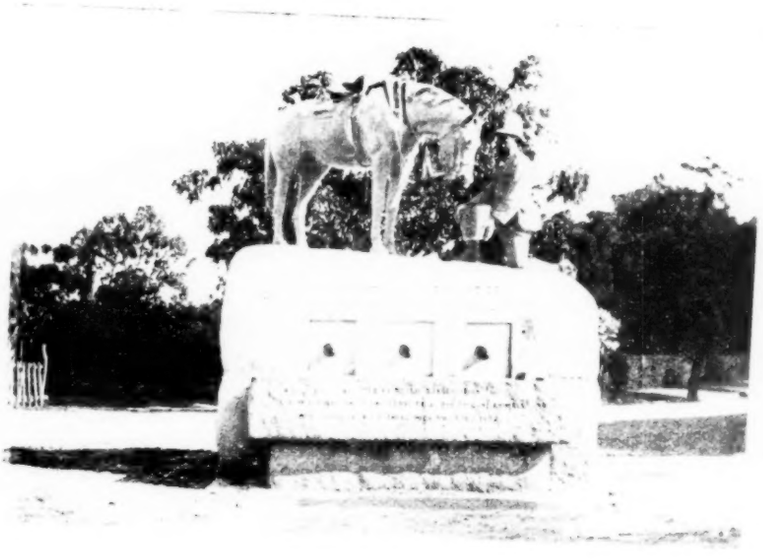
STIFLE JOINT LAMENESS. *To illustrate note by Mr. J. Paton.*



Showing deposit of bone on the condyles of femur.
Healthy femur shown for comparison.



INJURY TO THE FLEXOR METATARSI. *To illustrate article by Mr. G. H. Williams.*



A Monument to Horses, at Port Elizabeth, Cape Colony.

hypodermic injections of morphia. Two died the same night, and the recovery of the other was extremely protracted, as the animal lay about a long time and in walking dragged its hind legs. This semi-paralysis passed off in the course of a week.

Gentlemen, these notes are incomplete and put together in a very rough and ready way, and for this I must apologise. I think it a great pity that not more trouble is taken to record poisoning cases as they occur from time to time. Literature on this subject is very scarce, and one has practically to depend on a good deal of circumstantial evidence in arriving at conclusions. I feel sure that some of you have had similar cases to those which I have recorded, and I trust we shall hear something about them, and personally I hope to learn something to-day.

Discussion.

Mr. Bond said he wished to thank Mr. Gillam for his paper—one particularly interesting to country practitioners. Botany was not only one of the principal studies of his college days, but also one of great pleasure and use in after life. With regard to poisonous plants, the yew stood at the head of the list; it was extraordinary how small a quantity occasionally caused death. Yew poisoning was of importance from the legal point of view, owing to the careless disposal of the clippings; it was very commonly used at Xmas time for decorations, and in many instances it was taken down and thrown away at the back of the premises instead of being burned, such neglect had to his personal knowledge resulted in the death of valuable animals. At certain seasons of the year two to four ounces of yew chewed was quite sufficient to cause death. One did not hear much of hemlock poisoning as people were more alive to its poisonous properties than in the olden times. With regard to aconite, he should like to ask Mr. Gillam what he considered an overdose? Aconite poisoning was very rare. A good deal of the Tincture of Aconite now offered for sale was absolutely worthless; the alkaloid was found in the roots of the plants, and these required very careful collecting and preparing to be of any value. He had never seen a case of digitalis poisoning, and considering that the flowers were only active for about three weeks in May (when they were collected for medicinal purposes) he should not expect it to be very common.

Mr. Bovett, after thanking Mr. Gillam for his paper, said he should like to ask what was considered a poisonous dose of aconite, as he understood Prof. Penberthy had given as much as two ounces of the tincture in capsule without fatal results.

He had recently attended two steers poisoned by the Œnanthe crocata, one died and the other recovered. The symptoms corresponded with those given by Mr. Gillam; the intense straining and stinking fœtid diarrhœa were particularly marked. The animals picked up the poison from the debris of an old ditch which had been cleared out. He sent specimens of the tubers to Prof. M'Fadyean who was so struck with their size that he sent for more.

Mr. Gibbings said he had had very little experience of poisoning by plants except the yew, although practising in a country district. He had experienced many cases of yew poisoning and could corroborate what had been said as to the very small quantity required to kill, and instanced a case where a man had been sent for a doctor, and in the short time he was waiting at the door, the horse nibbled a sufficient quantity of yew to cause its death.

Another peculiarity of yew poisoning was its similarity to anthrax, so much so that he was generally cautious not to express a definite opinion before examining the ear. He should like to ask Mr. Gillam if he had come across any cases of laurel poisoning? He had seen two and the symptoms were rather interesting, the pulse very slow, distinct vomition, and on examination the vomits were found to contain quantities of laurel. His lack of experience in other cases of plant poisoning was probably due to his own oversight, at any rate he would not like to say they did not occur in his district.

Mr. Whitemore joined in thanking Mr. Gillam for his very instructive paper. He mentioned a case in which 15 minims of tincture of aconite caused marked symptoms of poisoning; he attributed this to the fact that the tincture had been in stock for some time and had probably become concentrated by evaporation. He would like to ask Mr. Gillam's opinion as to whether the following was a case of plant poisoning or not; he himself thought it might have been from the fact that the animal had pastured on low-lying, marshy ground. There was a constant peculiar grunt, acute constipation, emphysema of the lungs (which subsequently invaded the subcutaneous tissues), temperature nearly normal. The animal died, but a careful search of the rumen revealed nothing. As the animal lived for three days, however, any poisonous plant would probably have been digested.

Mr. Davie thanked Mr. Gillam for his able paper. With regard to the Yew he considered it very remarkable that such small doses sometimes killed whilst at others large quantities could be eaten with impunity. He had seen several cases of bracken fern poisoning; animals would not readily eat ferns, but in these cases the owner was very short of keep, and had mixed ferns with the hay. He stopped the ferns, gave a purgative and the animals recovered. Hay cut in shrubberies was a dangerous food, as poisonous plants often became inter-mingled. Refuse from old gardens was also dangerous, if carelessly disposed of.

Mr. Taylor said he wished to add his thanks to Mr. Gillam. His experience was chiefly yew poisoning; in these cases he found it advantageous to use the trocar and canula, and injected through the latter half a drachm of carbolic acid and four ounces of oil

In June, 1903, he made a post-mortem on a valuable cow, one of a prize herd, which was found dead in a field; the owner suspected lightning or anthrax, but as no symptoms could be discovered he proceeded with the post-mortem. The rumen was full and inflamed, and the small bowels also showed patches of inflammation; he sent the contents of the stomach and bowels to Prof. Bayne, who reported the case to be one of Colchicum poisoning.

In May, 1905, he was called to two steers both suffering from acute diarrhœa and tympany; they were off their legs and very cold; the gardener said they had eaten twigs of laburnum. He inserted the trocar and canula in one which recovered; the other was too far gone and died; in this case also he sent to Prof. Bayne, who confirmed the gardener's statement, by certifying the case to be one of poisoning by laburnum.

Mr. Perry said he could add very little to what previous speakers had mentioned, except that he had recently treated a case of poisoning in a horse caused by eating common privet. Yew poisoning seemed to be very common in his district.

Mr. Saunders said he wished to add his thanks to Mr. Gillam for his explicit paper. Hemlock poisoning appeared to be the most common accident around Taunton, and he was sorry to say that the majority of cases terminated fatally before they could be treated. Acorn poisoning was also very prevalent, especially in young cattle.

Mr. Penhale complimented Mr. Gillam on his very able paper. His experience of plant poisoning was not very large except with Yew, Hemlock, Ferns, and Acorns. He quite agreed with what had been said as to the small quantity of yew required to cause death, and the rapid manner in which it acted. He had also found acorn poisoning to be very fatal.

Mr. J. DUNSTAN (Liskeard) endorsed what Mr. Bond had said as to the value of the study of botany. Less attention was paid to it at the present time than formerly. This he considered a pity, as the the number of poisonous plants we met with was very great. He found in his district, when driving along the roads, he could put his hand on a poisonous plant, certainly within ten yards of wherever he happened to be. It was also an important study because of the many obscure cases we met with, the origin of which may probably be due to plant poisoning. He wished to corroborate what had been said regarding the similarity of yew poisoning to anthrax.

Œnanthe Crocata poisoning was rather frequent: the roots being more often eaten than the plant. A case had come under his notice not long since, where a whole herd was affected by eating the roots in a curious manner; keep was scarce and the owner kept them in a bare field longer than he ought to have done—even while ploughing it—in so doing quantities of the roots were turned up, the cattle followed the plough, ate freely of the roots, and several of them died. He was much interested in Mr. Bond's statement that a good deal of the tincture of aconite sold was useless; if good, he considered it a most potent drug.

Fern poisoning was well known, and the patients often recovered; it was liable to be mistaken for anthrax unless the microscope was used. Bracken ferns were never eaten except with, or when there was no other fodder.

There were, of course, many other poisonous plants which the essayist had not touched upon—the Nicotiana Tabacci or common tobacco plant, frequently used in cases of skin diseases; furze prickle poisoning—common to hunters at certain seasons of the year; blue mould, which often caused bowel trouble and said to be common in Germany. He had had a case in a horse which had been fed with stale bread covered with blue mould. White thorn berries had been known to poison young colts. Corn cockle seeds were very poisonous, but fortunately cases of this kind were rare. Sometimes, however, when the machinery used for separating the grain was defective, as much as 40 per cent. could be found in the flour. Lolium temulentum used to be considered a poisonous grass, but he could not recollect having seen it except in a museum. Poisoning by Laburnum seeds in May was quite possible. Potato poisoning was also more prevalent than is generally thought, particularly when the old potatoes were sprouting, as the young shoots contained a large quantity of Solanine.

In replying Mr. Gillam said he quite agreed with Mr. Bond and other speakers as to the small quantity of yew required to cause fatal results; he would not express an opinion as to Mr. Bond's enquiry as to the overdose of aconite, but considered it a very risky drug. The plant was by no means rare in his district, as nearly every old garden contained quantities of it.

He had never seen any cases of laurel poisoning, but as laurel and privet contained an active principle resembling hydrocyanic acid it was quite probable they would be poisonous. He did not refer to acorn poisoning as he felt it would take up too much time and would in itself provide material for a paper. This also applied to many of the other plants mentioned by some of the speakers. Mr. Dunstan's tobacco plant poisoning did not in his opinion come within the scope of this paper. He was glad Mr. Dunstan had mentioned furze prickle poisoning because it was very common in his district, especially in the stag hunting season. He found it much more common in some seasons than in others, and it was curious that this coincided with the presence of a parasite on the furze. He doubted if ergot ever caused poisoning, and as the lolium temulentum was never seen outside a museum it was scarcely worth mentioning. Potato poisoning was, of course, very common; the small green potatoes which grew near the surface in particular being dangerous because of the extra amount of chlorophyl they contained.

In moving a cordial vote of thanks to Mr. Gillam, Mr. Ascott said he did so, not only because of the excellence of the paper (which was of itself quite sufficient), but also because of the ready manner, in which Mr. Gillam had responded to his request for a paper. The attendance at the meeting was very gratifying, and showed that the subject the essayist had chosen was one of great interest. He could say with sincerity that this meeting was one of the most successful and pleasant the Association had had since his connection with it, and this he took as a compliment to the President and to Mr. Gillam.

A hearty vote of thanks to the President brought the meeting to a close.

The autumn meeting will be held at Plymouth in November next.

WM. ASCOTT, *Hon. Sec.*

REVIEW.

"A MANUAL OF VETERINARY THERAPEUTICS AND PHARMACOLOGY."—By E. WALLIS HOARE, F.R.C.V.S. Second edition. Demy 8vo. Pp. xxiv+779. Price 15s. net. (Bailliére, Tindall and Cox, London).

It is nearly twelve years since the first edition of this work was published. Having now been re-written and enlarged, and to some extent altered in character, it may fairly, we think, be considered as a new work without reference to its predecessor.

The book is divided into three sections, the first of which, consisting of 93 pages, deals with such general considerations as nursing, hints for diagnosis, and the prescription and administration of medicines. Naturally, this portion of the work contains much matter with which every practitioner is familiar, but it is well worth perusal by a student.

The second section, numbering rather more than 300 pages, is devoted to materia medica, treated much more from a pharmacological than a pharmaceutical standpoint. On the whole the author, while never going very deeply into any part of the subject, has presented a fair summary of the actions and uses of the drugs most used by veterinarians. Occasionally, however, we find a statement with which we scarcely agree—as upon page 121, where the danger of applying lead externally in canine practice is, in our judgment, considerably overestimated. On the other hand we notice some curious omissions. Digitalin, for instance, is stated to be "not used in veterinary practice." Subacetate of copper is not even named, and, though Ichthyol as an external application receives consideration, we find no mention of its use internally. On page 397 there is a serious ambiguity in connection with "Anti-Distemper Vaccine," which, with some other kindred subjects, is dealt with by Mr. Henry Gray. The methods of preparing and using the vaccines of Phisalix, Lignières, and Copeman, are described, but while we see a positive assertion that "It is a preventive of distemper" it is quite uncertain which of the three preparations is recommended, or whether all are pronounced equally reliable.

The remainder of the volume is devoted to "Special Therapeutics," and may be described as a general survey of the principles of treatment of the more common diseases which require, and will repay, *medical* attention—surgery being excluded. Speaking generally, Mr. Hoare's lines of treatment are rational and commendable, and this portion of the book is, perhaps, the most valuable. As in the previous section, other writers have assisted. Mr. Gray has contributed about forty pages on distemper and canine typhus, in which the results of

an undeniably great experience are scarcely set forth to the best advantage, and Lieut.-Col. Blenkinsop has written an excellent little chapter on the treatment of mange in horses and camels, and ringworm in the horse.

Very many prescriptions are found in this latter portion of the book. Some are old, and familiar to us all; others by no means so well known, but they make up a useful collection for either town or country practice.

On the whole, the book is a useful addition to contemporary professional literature. In his preface, the author expresses the hope that the work "may prove useful to students and junior practitioners" and this hope—which will not, we think, be a vain one—may be taken to illustrate the scope of the volume. To the mature veterinarian who has kept abreast of modern therapeutics, it is not perhaps indispensable, but there are, nevertheless, a good many practitioners who will find it a useful every-day companion in their surgeries.

W. R. C.

DISEASE.

Extract from *The Times* report of the Presidential Address at the meeting of the British Association.

The study of the physiology of unhealthy, injured, or diseased organisms is called pathology. Our knowledge of disease has been enormously advanced in the last quarter of a century, and in an important degree our power of arresting it, by two great lines of study going on side by side and originated, not by medical men nor physiologists in the narrow technical sense, but by naturalists, a botanist, and a zoologist. Ferdinand Cohn, Professor of Botany in Breslau, by his own researches and by personal training in his laboratory, gave to Robert Koch the start on his distinguished career as a bacteriologist. It is to Metschnikoff the zoologist and embryologist that we owe the doctrine of phagocytosis and the consequent theory of immunity now so widely accepted. We must not forget that in this same period much of the immortal work of Pasteur on hydrophobia, of Behring and Roux on diphtheria, and of Ehrlich and many others to whom the eternal gratitude of mankind is due, has been going on. It is only some 15 years since Calmette showed that if cobra poison were introduced into the blood of a horse in less quantity than would cause death, the horse would tolerate with little disturbance after ten days a full dose, and then day after day an increasing dose, until the horse without any inconvenience received an injection of cobra poison large enough to kill 30 horses of its size. Some of the horse's blood being now withdrawn was found to contain a very active antidote to cobra poison—what is called an antitoxin. The procedure and preparation of the antitoxin is practically the same as that previously adopted by Behring in the preparation of the antitoxin of diphtheria poison. The remarkable development of Metschnikoff's doctrine of phagocytosis during the past quarter of a century is certainly one of the characteristic features of the activity of biological science in that period. At first ridiculed as "Metschnikoffism," it has now won the support of its former adversaries. The first 18 years of Metschnikoff's career, after his undergraduate course, were devoted to zoological and embryological investigations. It was known that when a wound bringing in foreign matter is inflicted on a vertebrate animal the blood vessels become gorged in the neighbourhood and the colourless corpuscles escape through the walls of the vessels in crowds. Their business in so doing, Metschnikoff showed, is to eat up the foreign matter, and also to eat up and remove the dead, wounded tissue. He therefore called these white or colourless corpuscles "phagocytes," the eater cells, and in his beautiful book on Inflammation, published twenty years ago, proved the extreme importance of their activity. At the same time he had shown that they eat up intrusive bacteria and other germs; and his work for the last twenty years has mainly consisted in demonstrating that they are the chief, and probably the only, agents at work in either ridding the human body of an attack of disease-causing germs or in warding off even the commencement of an attack, so that the man or animal in which they are fully efficient is "immune"—that is to say, cannot be effectively attacked by disease germs. Metschnikoff's conclusion, as recently stated in regard to the whole progress of this subject, is that the phagocytes in our bodies should be stimulated in their activity in order successfully to fight the germs of infection. Alcohol, opium, and even quinine, hinder the phagocytic action; they should therefore be entirely eschewed or used only with great caution where their other and valuable properties are urgently needed. It appears that the injection of blood-serum into the tissues of animals causes an increase in the number and activity of the phagocytes, and thus an increase in their resistance towards pathogenic germs. After years of opposition bravely met in the pure scientific spirit of renewed experiment and demonstration, Metschnikoff is at last able to say that the foundation-stone of the hygiene of the tissues—the thesis that our phagocytes are our arms of defence against infective germs—has been generally accepted. It is the great merit of Major Ross, formerly of the Indian Army Medical Staff, to have discovered, by most patient and persevering experiment, that the malaria parasite passes a part of its life in the spot-winged gnat or mosquito (Anopheles), not, as he had at first supposed, in the common gnat or mosquito (Culex), and that if we can get rid of spot-winged mosquitoes or avoid their attentions, or even only prevent them from sucking the blood of malarial patients, we can lessen or even abolish, malaira. This great discovery was followed by another as to the production of the deadly "Nagana" horse and cattle disease in South Africa by a screw-like, minute animal parasite, the Trypanosoma Brucei. The tsetze fly, which was already known in some way to produce this disease, was found by Colonel David Bruce to do so by conveying by its bite the Trypanosoma from wild big game animals, to the domesticated horses and cattle of the colonists. The discovery of the parasite and its relation to the fly and the disease was as beautiful a piece of scientific investigation as biologists have ever seen. The trypanosomes have acquired a terrible notoriety within the last four years, since another species, also carried by a tsetze fly of another species, has been discovered by Castellani in cases of sleeping sickness in Uganda, and demonstrated by Colonel Bruce to be the cause of that awful disease. Over 200,000 natives of Uganda have died from it within the last five years. It is incurable, and, sad to relate, not only a certain number of European employées have succumbed to it in tropical Africa, but a brave young officer of the Army Medical Corps, Lieutenant Tulloch, has died from the disease acquired by him in the course of an investigation of this disease and its possible cure, which he was carrying out, in association with other men of science, on the Victoria Nyanza Lake in Central Africa. Trypanosomes are now being recognised in the most diverse regions of the world as the cause of disease—new horse diseases in South America, in North Africa, in the Philippines, and East India are all traced to peculiar species of trypanosome. I have not time to do more than mention here the effort that is being made by combined international research and co-operation to push further in our knowledge of phthisis and of cancer, with a view to their destruction. It is only since our last meeting at York that the parasite of phthisis or tubercle has been made known; we may hope that it will not be long before we have similar knowledge as to cancer. Only 18 months have elapsed since Fritz Schaudinn discovered the long-sought para-

sitic germ of syphilis, the *Spirocheta pallida*. As I write these words the sad news of Schaudinn's death at the age of 35 comes to me from his family at Hamburg —an irreparable loss. Let me finally state, in relation to this study of disease, what is the simple fact—namely, that if the people of Britain wish to make an end of infective and other diseases they must take every possible means to discover capable investigators, and employ them for this purpose. To do this far more money is required than is at present spent in that direction. It is necessary, if we are to do our utmost, to spend a thousand pounds of public money on this task where we now spend one pound. It would be reasonable and wise to expend ten million pounds a year of our revenues on the investigation and attempt to destroy disease. Actually what is so spent is a mere nothing, a few thousands a year. Meanwhile our people are dying by thousands of preventible disease.

The Government and Science.

It is, unfortunately, true that the successive political administrators of the affairs of this country, as well as the permanent officials, are altogether unaware to-day, as they were 25 years ago, of the vital importance of that knowledge which we call science, and of the urgent need for making use of it in a variety of public affairs. This is a thorny subject, and one in which, however much one may endeavour to speak in general terms, it is difficult to avoid causing personal annoyance. Yet it seems to me one which, believing as I do that it is of most urgent importance, it is my duty as your President to press upon the attention of the members of the British Association. The reason is, I think, to be found in the defective education, both at school and University, of our governing class, as well as in a racial dislike among all classes to the establishment and support by public funds of posts which the average man may not expect to succeed by popular clamour or class privilege in gaining for himself—posts which must be held by men of special training and mental gifts. Whatever the reason for the neglect, the only remedy which we can possibly apply is that of improved education for the upper classes, and the continued effort to spread a knowledge of the results of science and a love for it amongst all members of the community. If members of the British Association took this matter seriously to heart they might do a great deal by insisting that their sons, and their daughters too, should have reasonable instruction in science both at school and college. They could, by their own initiative and example, do a good deal to put an end to the trifling with classic literature and the absorption in athletics which is considered by too many schoolmasters as that which the British parent desires as the education of his children. The President then, as an example, read Lord Crawford's letter to *The Times* of October 31, 1905, on the shabby treatment by the Treasury of the late Dr. Copeland, His Majesty's Astronomer for Scotland. He then referred, as an instance on the other side of the account, to the National Physical Laboratory. As long ago as 1842 the British Association took over and developed an observatory in the Deer Park at Kew, which was placed at the disposal of the Association by her Majesty the Queen. From this observatory at last has sprung, in the beginning of the present century, the National Physical Laboratory in Bushey Park, a fine and efficient scientific institution, built and supported by grants from the State, and managed by a committee of really devoted men of science, who are largely representatives of the Royal Society. In addition to the value of the site and buildings occupied by the National Physical Laboratory, the Government has contributed altogether £34,000 to the capital expenditure on new buildings, fittings, and apparatus, and has further assigned a grant of £6,000 a year to the working of the laboratory. I may mention also another institution which, during the past quarter of a century, has come into existence and received, originally through the influence of the late Lord Playfair (one of the few men of science who has ever occupied the position of a Minister of the Crown), and later by the influence of the Right Hon. Joseph Chamberlain, a subsidy of £1,000 a year from the Government and a contribution of £5,000 towards its initial expenses. This is the Marine Biological Association, which has a laboratory at Plymouth, and has lately expended a special annual grant, at the spontaneous invitation of His Majesty's Treasury, in conducting an investigation of the North Sea in accordance with an international scheme devised by a central committee of scientific experts. I do not hesitate to say here that the results obtained by the Marine Biological Association are of great value and interest, and, if properly continued and put to practical application, are likely to benefit very greatly the fishery industry; on the other hand, if the work is cut short or entrusted to incompetent hands, it will no doubt be the case that what has already been done will lose its value —that is to say, will have been wasted. There is imminent danger of this perversion of the funds assigned to this scientific investigation taking place. There is no guarantee for the continuance of any funds or offices assigned to science in one generation by the officials of the next. The Mastership of the Mint held by Isaac Newton, and finally by Thomas Graham, has been abolished and its salary appropriated by non-scientific officials. Only a few years ago it was with great difficulty that the Government of the day was prevented from assigning the directorship of Kew Gardens to a young man of influence devoid of all knowledge of botany! One of the most solid tests of the esteem and value attached to scientific progress by the community is the dedication of large sums of money to scientific purposes by its wealthier members. We know that in the United States such gifts are not infrequent; they are rare in this country.

Castration—Cruelty.

At Spalding Petty Sessions on Tuesday last, John Henry Schrimshaw, castrator, Pinchbeck, was summoned by the R.S.P.C.A. for causing a horse to be cruelly ill-treated at Moulton Sea's End, near Spalding, Lincolnshire, on and between June 29 and July 3.

Mr. M. Merry, of Spalding, appeared to prosecute, and Mr. Waite, of Boston, appeared for defendant.

Mr. Merry said the summons was taken out by the R.S.P.C.A. against the defendant for causing a horse to be cruelly ill-treated on certain dates between June 29 and July 3. Defendant was a castrator living at Pinchbeck, and did, he believed, a very large business in that line. It appeared that on June 27, from instructions received, defendant went down to Mr. John Harris's place at Moulton Sea's End, and there, about 7.30 in the evening castrated a colt, the method used being by putting on caustic clams. It was an old method, but a recognised one. The proper course to take when these clams were put on was that they should be removed in 24 hours. Defendant stated to Mr. Harris that he would come on the following day, but he did not come, though it was certainly a very wet day. He did not come near the premises again until July 3, six days afterwards. On the 29th Mr. Harris noticed the horse showed symptoms of illness. The parts were inflamed, and on July 3 he went up to Spalding and saw Mr. Reeks, a veterinary surgeon, who removed the clams. About half-an-hour afterwards defendant appeared on the scene. The complaint was not about the way in which the operation was performed, but in the way of carrying it out. He must have known perfectly well that the clams ought to have been removed within 24 hours.

John Harris, Moulton Sea's End, farmer, said defendant

had done work for him, the last occasion being on June 27, when he came to castrate a colt. The method he used was to put on caustic clams, and he said he should come again the next day to take them off. He did not. Witness thought the horse would have died during the time, and on July 3 he came and got Mr. Reeks to come down and take them off. The horse had not yet recovered.

Examined by Mr. Waite, defendant had done work for him before, but he always came the following day and removed the clams. He supposed Schrimshaw understood his work, or he would not have trusted him He did not send for defendant when he did not return.

Charles Henry Waters, R.S.P.C.A. Inspector, said he saw Schrimshaw about the case on July 10. He told defendant what he was enquiring into, and asked him if he would care to give any explanation. He replied that it was very wet on the Thursday, and this upset his arrangements. He was also very busy and could not get round to see this colt until the following Tuesday, when he found Mr. Reeks had been called in. He saw the horse, which appeared to be going on all right. He had not forgotten it.

Cross-examined by Mr. Waite: He did not put these words into defendant's mouth. He had not seen the horse.

H. C. Reeks, F.R.C.V.S., Spalding, said that on Tuesday, July 3rd, he received a communication from Mr Harris, and in consequence of that he went down to the farm in the afternoon and saw the colt. He examined it and found clams on, and they appeared to have been on five or six days. There were signs of inflammation (and granulation tissue adhesions between the ends of the exposed cords and the scrotum or purse). He should have expected that the clams would have been removed not later than 24 hours after being put on, and he should consider it cruelty to leave them on six days.

Cross-examined by Mr. Waite: The operation was bound to be a painful one however performed. The method adopted was very commonly practised in this neighbourhood, in fact it was the usual method. It was recognised by the profession and described in the text-books. The only point at issue was whether the clams were on an unnecessarily long time. The rule laid down was 24 hours. There might be variation in some instances within a few hours, but certainly not a day. He was not inclined to admit that in some cases they might be left on three or four days. He should say no practitioner would conscientiously recommend it. The book produced by Mr. Waite by John A. W. Dollar was from the German. The statement contained in the book that "after 24 hours the clams may be removed, though they may be left in position two or three days or even longer," gave too much latitude. After he had seen this case he certainly did not believe that the inflammation was less after three or four days than in the shorter period.

W. G. B. Dickinson, F.R.C.V.S., of Boston, agreed with the evidence given by the last witness.

Cross-examined by Mr. Waite, he limited the time to 24 hours, "according to the English text-books not your German rubbish." The German book produced was of no practical value to anyone. In his opinion a man should have the operation performed in the most humane manner, and by a qualified veterinary surgeon.

Mr. Waite: Then may I take it that there is some professional feeling in this matter?

Witness: I brought those words in because no veterinary surgeon would work and quote from those books.

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Aug. 4		7	7			7	12			4	16	33
Corresponding week in	1905 ..	18	20			33	54			2	21	67
	1904 ..	19	35			22	35			1	20	100
	1903 ..	11	18			37	59			1	35	131
Total for 31 weeks, 1906		570	847			674	1267			297	728	3972
Corresponding period in	1905 ..	608	843			758	1312			650	536	2472
	1904 ..	610	942			930	1668			1061	915	4338
	1903 ..	486	750			867	1424			1165	1014	4990
Board of Agriculture and Fisheries, Aug. 7. 1906.												
IRELAND. Week ended July 28		..	.	..	..	..	..	..	..	..	3	16
Corresponding Week in	1905 ..	..	..	..	..	..	..	..	..	1	22	83
	1904 ..	..	..	..	..	1	1	..	..	1	10	178
	1903 ..	..	..	..	..	..	..	1	..	1	19	130
Total for 30 weeks, 1906		3	7	..	..	4	11	..	..	150	61	714
Corresponding period in	1905 ..	2	2	..	..	12	33	..	..	225	93	845
	1904 ..	2	2	..	..	8	24	.	..	368	174	2430
	1903 ..	2	3	..	..	1	2	2	..	395	173	1943

Epizootic Lymphangitis: Week ending Jan. 27, 1906, 1 case.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, Aug. 2, 1906.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection.

It is recognised in the profession that the clams should never be left on more than 24 hours.

Mr. Waite said the operation was bound to be cruel, and the law distinctly recognised that some cruelty should be admitted where the operation was such as to render the animals of more service for the use of man. He gave a number of quotations from the book already mentioned where it was stated that the clams might be left on two or three days, or even longer.

Defendant said he had learned the business with his father, who had a very large connection in the Boston neighbourhood, and he had a connection in this neighbourhood sixty miles across. He had more business than he could do, in fact. He had been in the habit of doing work for several veterinary surgeons in the district. He castrated over five hundred horses in a year on an average, and he had never had any previous complaints, neither had any proceedings been taken against him. The method he employed was the recognised method amongst the best breeders. The usual time of taking the clams off was any time after 24 hours, and there was variation in the practice. The pain spoken of would not be caused by the clam, but would have been suffered even if the clam had been taken off at the end of 24 hours.

Thomas Balderston, New York, Lincolnshire, said he was a large owner of entire horses, and in his experience had had a number of horses castrated by the caustic clam method. He generally removed them himself, sometimes after 24 hours, and sometimes after three or four days Schrimshaw was trusted by most people, and regarded as a skilful and careful man.

The Bench retired to consider the case, and on returning into Court said they were unanimous in thinking that there had been cruelty, and defendant would be fined £2 and costs.

COMPARATIVE SUMMARY OF RETURNS—PARASITIC MANGE, IN IRELAND.

	1906	1905	1904	1903
Outbreaks in July	7	17	13	19
Seven Months	61	143	124	172

CORRESPONDENCE.

MILK SUPPLY.

Sir,

I read with some interest the paper given by Dr. Savage at the Congress of the Royal Sanitary Institute at Bristol. I should, however, have been more interested to read the discussion on it by the veterinarians present. I hope some of them stuck up for their end of the stick, as with all due respect to Dr Savage I don't think he gave the office and duty of the veterinary surgeon sufficient prominence in his paper. The duties of the Medical Officer of Health and the Veterinary Surgeon ought to be clearly definable. There ought to be no haziness about the duties of each. Neither need encroach on the ground of the other. Surely all that affects the cow is the province of the veterinary surgeon, and equally all that concerns the human being in his connection with the cow is the province of the medical man. The housing of the cow, the diagnosing of her diseases, and the methods employed in obtaining and collecting the milk are all matters upon which the veterinary surgeon can give sound advice and can speak with authority.

I don't like that sentence in Dr. Savage's letter beginning "no doubt *medical officers of health* could draw up regulations which would effectively control the milk service and establish a pure milk supply, but we have to consider what measures are likely to be considered by Parliament, and we must avoid if possible any steps which would cause an increase in the retail price of milk."

This sentence ignores the part the veterinarian would play in the matter of "drawing up the regulations." Why not acknowledge it and bracket it along with the M.O.H's in its usefulness.

Again, I think it would be as easy to solve the thoughts of the Sphinx, as to answer the riddle of how to produce a pure milk supply without increasing the cost of the milk. An impartial view of the situation would seem to indicate that if any perfect improvement is to be brought about in the matter of milk supply in many cases the landlord will be the first man to be proceeded against, down will come some of his buildings, then if another modern structure is put up at his expense he'll raise the tenant's rent to recoup himself, the farmer or the dairyman will have to pay more probably for his labour, and they will have to increase the cost of the milk's retail price simply out of necessity, and why not? As a lady once said to me "if you want a good thing you must pay for it."

I am at one with Dr. Savage when he says that the regulations under the Dairies, Cowsheds, and Milkshops Order should be made compulsory, but they "will not be enforced in the majority of rural districts" If they were enforced some of the authorities would have to take action against themselves, and that would be a little bit like "Satan reproving sin."

With the sentence in Dr. Savage's paper that says, "no milk from a cow with wasting disease or a diseased teat or udder should be sold until permission be given by the M.O.H. or better, a properly appointed veterinary surgeon." I am in partial agreement. Here the M.O.H. and the veterinary surgeon ought I think to work together. I am not sure that many veterinary surgeons can carry out the necessary investigations for the detection of tubercle bacilli in milk, but I am open to correction by Dr. Savage if I write also that not many medical men are capable of conducting this investigation satisfactorily.

A few simple rules not necessarily complete, would do much to give us clean milk—(*a*) Daily grooming of the cow. (*b*) Sponging udder and flanks before each milking. (*c*) Washing of hands by milker and clean white overalls for him or her. (*d*) Sterilised pails and strainers. (*e*) Separate cleansable place of special structure for cow or cows to be milked in. (*f*) Refrigeration—some think in the open air. (*g*) No dipping fingers in milk. (*h*) Cool milk vans. (*i*) No exposure of milk in shops. (*j*) Extermination of tuberculous cows. (*k*) Rigid inspection of their udders.

These are regulations that could be brought about without occasioning a revolution, although I am afraid that even these would increase the cost of the milk to the consumer, but again I write—why not?—Yours truly,

G. MAYALL.

SALE OF MEDICINES.

Sir,

The article termed "Mystery *versus* Publicity" may be a source of satisfaction to anyone who has a book to sell, or anyone who holds a soft place under Government, but to the country practitioner it is absolute piffle. It shows plainly how inexperienced some men are who pose as authorities in veterinary matters. I wonder how many country practitioners would receive satisfactory payment for advice alone. Probably 2 per cent. Many practitioners know that they can only charge a small fee for advice and journey, but make their expenses out of medicines. No doubt veterinary surgeons would like to be strictly professional, but we cannot get away from the fact that our clients in some country districts are mostly superstitious and ignorant.—Yours truly,

COUNTRY PRACTITIONER.

VETERINARY DOSES AND PRESCRIPTION WRITING, by PIERRE A. FISH, D.Sc., D.V.M. 16mo, 174 pp., with note book, limp, $1 net. Taylor & Carpenter, Ithaca, New York.

LA PROFILASSI DELLE MALATTE INFETTIVE DEGLI ANIMALI, Dr. UBERTO FERRETTI. 16mo. XII. + 582 pp., and 64 Publrs. advts. Cloth, L4·50. Ulrico Hoepli, Milan.

COMMUNICATIONS AND PAPERS RECEIVED—Messrs. W. Jowett, H. Caulton Reeks, J. W. McIntosh, "Canis."